



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,012	01/28/2000	Osamu Hori	0039-7540-2SRD	1658

22850 7590 01/30/2003

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

CARTER, AARON W

ART UNIT	PAPER NUMBER
----------	--------------

2625

DATE MAILED: 01/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/493,012

Applicant(s)

HORI ET AL.

Examiner

Aaron W Carter

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/11/00.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 56
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 and 7-27 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 5,884,056 to Steele.

As to claim 1, Steele discloses an image information describing method comprising:

sampling a plurality of thumbnail frames from video information including a plurality of video frames at arbitrary time interval and size (column 6, lines 6-7, 13-20, and 27-33 wherein the an arbitrary time interval corresponds to a set of temporal points selected randomly, at evenly spaced points or preferably at scene cut points); and

describing attribute information for specifying the video frame corresponding to each of the thumbnail frames as thumbnail information (column 6, lines 19-20).

3. As to claim 2, Steele discloses the image information describing method according to claim 1, further comprising describing additional information contains scene change position information of the video information (column 6, lines 31-34).

4. As to claim 3, Steele discloses the image information describing method according to claim 1, further comprising additional information contains frame change value information of the video information (column 6, lines 36-42 wherein the frame change value corresponds to the scene change measure).
5. As to claim 4, Steele discloses the image information describing method according to claim 1, wherein the attribute information contains position information indicative of a position on a time axis of the video frame corresponding to the thumbnail frame (column 3, lines 52-55 and column 8, lines 14-20).
6. As to claim 5, Steele discloses the image information describing method according to claim 1, wherein the attribute information contains information concerning the size of the thumbnail frame (column 8, lines 32-34).
7. As to claim 7, Steele discloses the image information describing method according to claim 1, wherein the thumbnail information contains image data of the thumbnail frame or a pointer for the thumbnail frame (column 6, lines 19-20 wherein image data of the thumbnail frame corresponds to the thumbnail image).
8. As to claim 8, 11, 14, 18, 24 and 27, Steele discloses the image information describing method according to claim 1, wherein the plurality of the thumbnail frames are stored as one item of the thumbnail information (column 3, lines 52-55 and column 6,

lines 19-20, wherein the stored video object includes all the temporal point which are represented by thumbnail images).

9. As to claim 9,12,15,16,22 and 25 , Steele discloses a video retrieval method for retrieving video information including a plurality of video frames by employing thumbnail information concerning a plurality of thumbnail frames (column 8, lines 6-14) obtained by sampling the video information with arbitrary time interval and size, the video retrieval method comprising:

describing, as the thumbnail information, attribute information containing at least first position information indicative of a position on a time axis in order to specify the video frame corresponding to each of the thumbnail frames; and

retrieving the thumbnail frame having the closest first position information to a second position information indicative of a position on the time axis of a desired video frame of the predetermined video information (column 7, lines 41-54 and column 6, lines 31-34 wherein a temporal point is selected at a point in the video object to be the frame indicated as pertaining to a scene change, in which the scene change is determined if the scene change value is equal to a predetermined frame change threshold).

10. As to claim 10,13,17,23 and 26, Steele discloses the video retrieval method according to claim 9, wherein the thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size (column 6, lines 49-56 and column 7, lines 41-54 wherein a frame is determined

to be a new scene by sampling only an arbitrary part of one frame (I) and going on to compare that frame with a model (M) frame).

11. Claims 19,21,28 and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,166,735 to Dom et al. ("Dom").

12. As to claims 19 and 28, Dom discloses a video reproduction method for reproducing video information including a plurality of video frames at variable speed by employing thumbnail information concerning a plurality of thumbnail frames (column 9, lines 12-13, Fig. 4 and column 10, lines 25-32 wherein the variable speed corresponds to normal playback (36) or fast forward (38) and the thumbnail information corresponds to the segment which indicates on a time axis which frames to be played) obtained by sampling video information with arbitrary time interval and size (column 8, lines 30-44), the video reproducing method comprising:

describing as thumbnail information, attribute information containing the thumbnail frames and at least position information indicative of a position on a time axis in order to specify the video frames corresponding to the thumbnail frames (column 8, lines 30-44).

describing frame change value information of the video information of the video information as additional information (column 10, lines 25-32 wherein frame change value corresponds to the user's selection); and

changing a reproduction speed of the thumbnail frames according to the frame change value information (column 10, lines 25-26 wherein reproduction speed is changed based on the user's selection).

13. As to claim 21 and 30, Dom discloses the image information describing method according to claims 19 and 28, wherein the plurality of the thumbnail frames are stored as one item of the thumbnail information (column 8, lines 15-20, wherein the stored video object includes all the temporal point which are represented by thumbnail images).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Steele as applied to claim 1 above, and further in view of U.S. Patent 6,275,829 to Angiulo et al. ("Angiulo").

As to claim 6, Steele discloses the information describing method according to claim 1 but does not explicitly disclose that the attribute information contains information concerning the resolution of the thumbnail image. However, it is obvious that the resolution of the thumbnail image is contained in Steele's method of describing the attribute information for specifying the video frame corresponding to each of the thumbnail frames as thumbnail information. In order to provide a clear and

Application/Control Number: 09/493,012

Art Unit: 2625

distinguishable thumbnail representation, which is reduced in resolution from its original image resolution, attribute information concerning this resolution of the thumbnail image must be provided as thumbnail information (Fig. 7, elements 52). Regardless, Angiulo teaches us that describing attribute information concerning its resolution is a key part of thumbnail frame(column 5 line 61 through column 6 line 1). Therefore it would have been obvious to one of ordinary skill in the art to combine the inventions of Steele and Angiulo. This gives the invention the advantage of describing attribute information concerning the resolution of the thumbnail frame, for the purpose of producing a clear image similar to the original video frame only reduced in resolution.

16. Claims 20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dom as applied to claims 19 and 28 above, and further in view of Steele.

As to claims 20 and 29, Dom discloses the method and apparatus of claims 19 and 28, but does not explicitly disclose that thumbnail frames contain a frame obtained by sampling only an arbitrary part of one frame of the video information with arbitrary time interval and size. However, Dom refers to Steele (column 8, lines 25-26) for Steele's method of scene cut selection. In which Steele a frame is determined to be a new scene by sampling only an arbitrary part of one frame (I) and going on to compare that frame with a model (M) frame (column 6, lines 49-56 and column 7, lines 41-54). Therefore it would have been obvious to one of ordinary skill in the art to combine the invention of Dom and Steele. This provides the advantage of determining a scene change without processing entire frames at a time.

Art Unit: 2625

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 6,154,771 to Rangan et al. discloses a scene change detection engine.

U.S. Patent 6,307,550 to Chen et al. discloses a scene change estimator.

U.S. Patent 6,449,608 to Morita et al. discloses video retrieval and reproduction.

U.S. Patent 6,357,042 to Srinivasan et al. discloses thumbnails based on scene changes.

A Unified Approach to Temporal Segmentation of Motion JPEG and MPEG Compressed Video by Yeo, Boon-Lock and Liu, B. discloses detecting a scene change based on only a part of an image, DC coefficients.

Contact Information

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron W. Carter whose telephone number is 703.306.4060. The examiner can normally be reached by telephone between 8am - 4:30pm (Mon. – Fri.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703.308.5246. The fax phone number for the organization where the application or proceeding is assigned is 703.872.9314 for regular communications.


Art Unit: 2625

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.0377.

Aaron W. Carter
Examiner
Art Unit 2625

AWC
awc

January 24, 2003


BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600